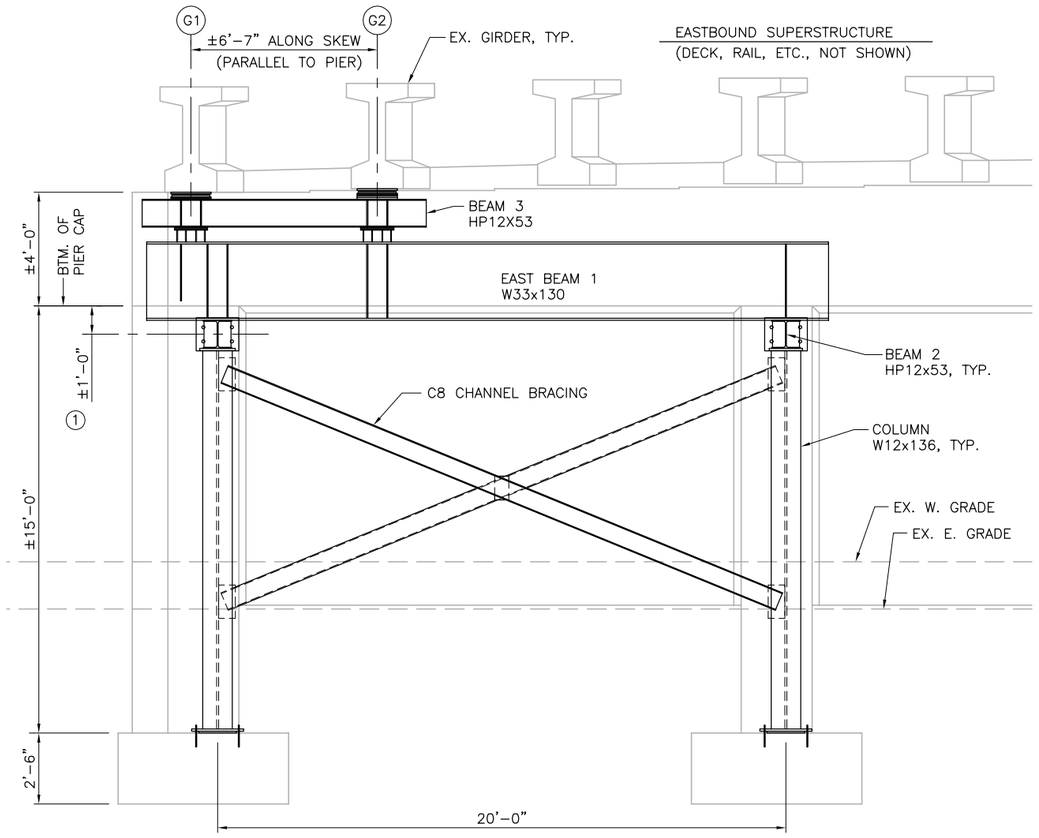


EAST ELEVATION

LOOKING WEST

NOTES

THE DESIGN AND CONSTRUCTION OF THE GIRDER SUPPORT SYSTEM SHOWN HEREIN IS DIRECTLY AFFECTED BY ACTUAL FIELD CONDITIONS AND DIMENSIONS. THE CONTRACTOR WILL NEED TO FIELD VERIFY DETAILS AND DIMENSIONS A NUMBER OF TIMES AS STEEL MEMBER FABRICATION AND CONSTRUCTION PROGRESSES. NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES, OMISSIONS, OR CHANGES IN FIELD CONDITIONS.

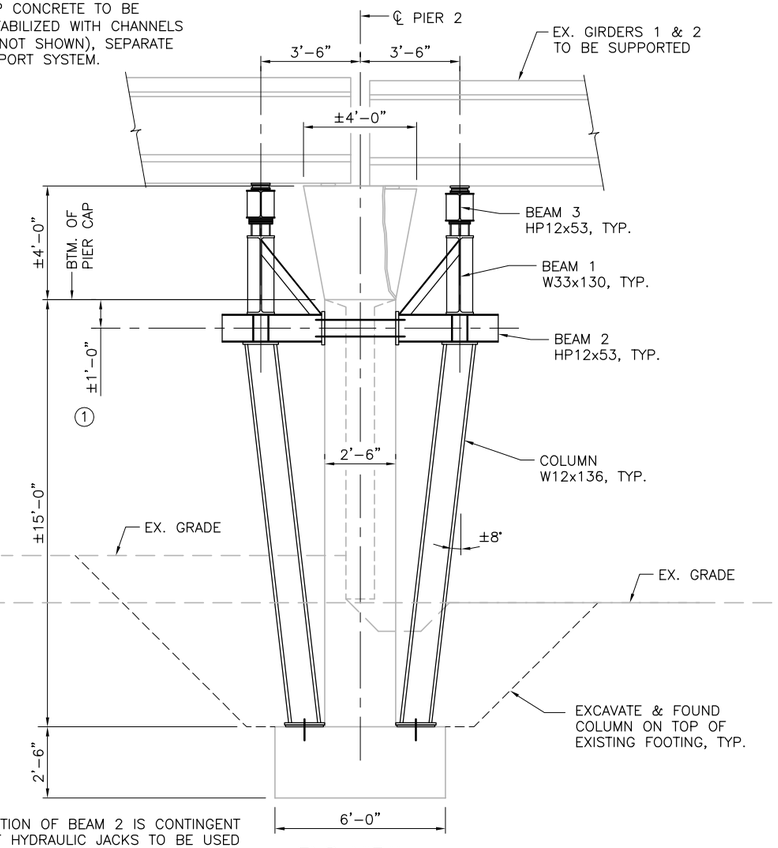
DESIGN REACTIONS

	EXISTING GIRDER 1	EXISTING GIRDER 2	BEAM 1 AT SOUTH COLUMN
DEAD LOAD	60 KIPS	65 KIPS	105 KIPS
LIVE LOAD	45 KIPS	75 KIPS	97 KIPS
TOTAL LOAD	105 KIPS	140 KIPS	202 KIPS

ALL REACTIONS ARE SERVICE LOADS, (UNFACTORED LOADS).

LIVE LOAD IS HL–93 (DESIGN TRUCK OR TANDEM AND DESIGN LANE LOAD) WITH 33% DYNAMIC LOAD ALLOWANCE.

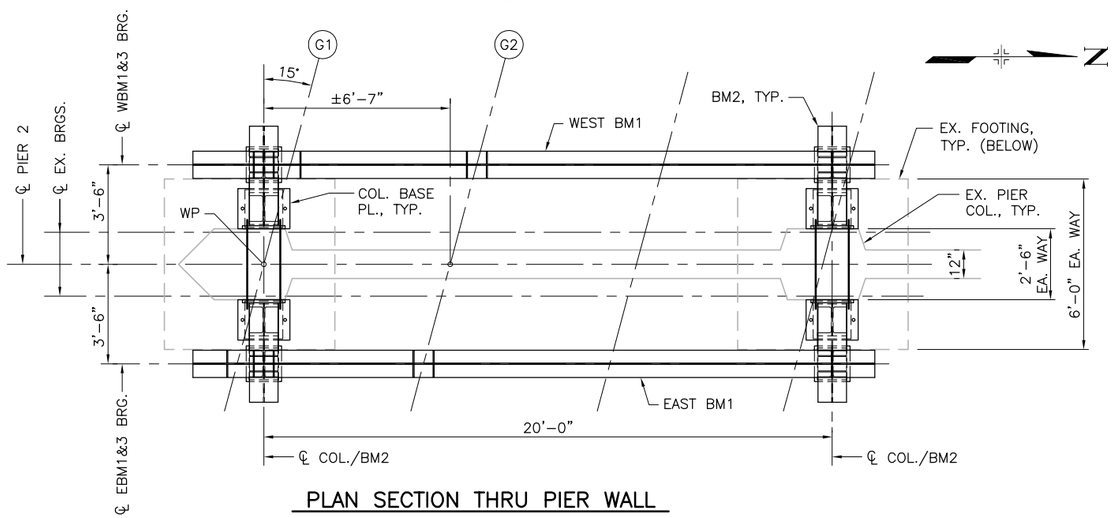
DAMAGED PIER CAP CONCRETE TO BE "CLAMPED" AND STABILIZED WITH CHANNELS AND COIL RODS, (NOT SHOWN), SEPARATE FROM GIRDER SUPPORT SYSTEM.



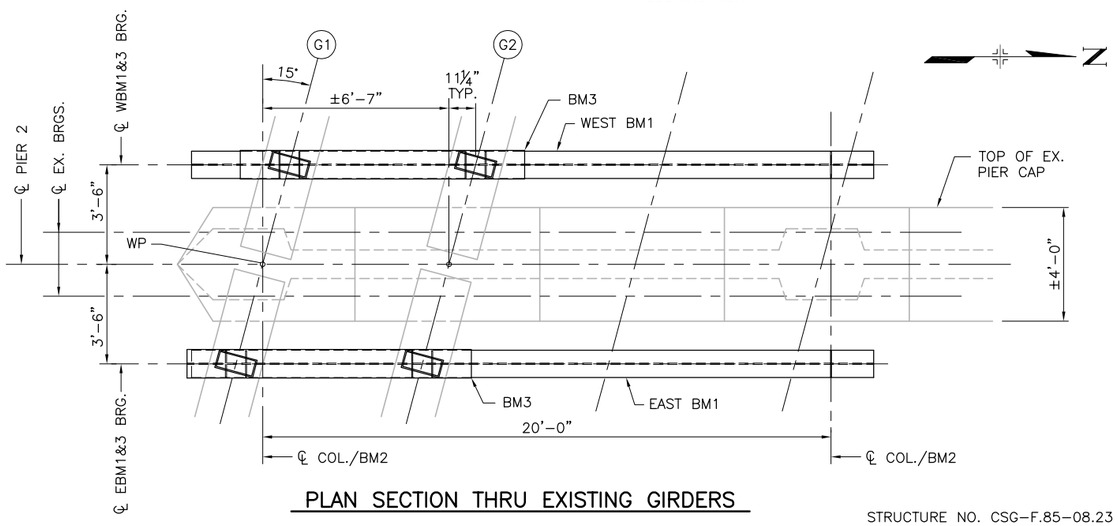
① VERTICAL POSITION OF BEAM 2 IS CONTINGENT ON HEIGHT OF HYDRAULIC JACKS TO BE USED TO INSTALL BEAM 3 AND BEARINGS ABOVE BEAMS 1. CONTRACTOR TO VERIFY LAYOUT.

END VIEW

LOOKING NORTH



PLAN SECTION THRU PIER WALL



PLAN SECTION THRU EXISTING GIRDERS

STRUCTURE NO. CSG–F.85–08.23

COMPUTER FILE INFORMATION			
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DRAWING FILE NAME:	REPAIR DETAILS.DWG		
ACAD VER. 2013			

STATEMENT:

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NO.	DESCRIPTION	DATE

CITY OF COLORADO SPRINGS

PPRTA — PIKES PEAK RURAL TRANSPORTATION AUTHORITY — CITY OF COLORADO SPRINGS PROJECTS

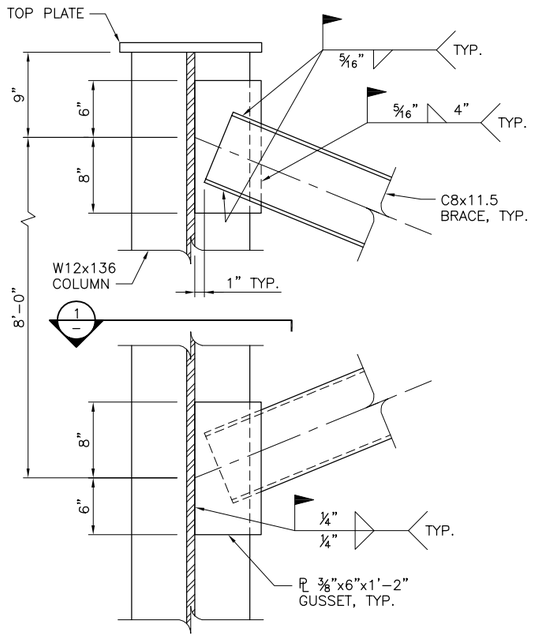
benesch engineers · scientists · planners

DESIGNED BY: M. MCDONALD DATE: 5/14/14
DRAWN BY: R. GORSE DATE: 5/14/14
CHECKED BY: DATE:

CIMARRON STREET OVER FOUNTAIN CREEK

PIER 2 REPAIR DETAILS (1 OF 4)

JOB NO. 000 SHEET 1 OF 4



COLUMN BRACING

BRACING CONNECTIONS SHOWN FOR ONE OF A PAIR OF COLUMNS.
BRACING CONNECTIONS AT OTHER COLUMN ARE OPPOSITE HAND.

NOTES

ALL STRUCTURAL STEEL MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH CDOT STANDARD SPECIFICATIONS SECTION 509, UNLESS NOTED OTHERWISE HEREIN OR DIRECTED OTHERWISE BY THE ENGINEER.

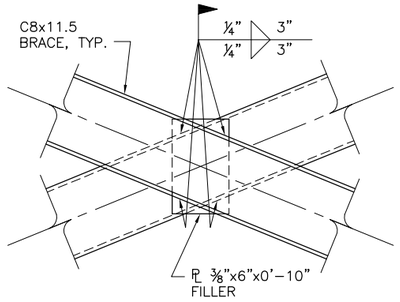
MEMBER SIZES INDICATED HEREIN ARE THE MINIMUM THAT ARE ACCEPTABLE.

ALL STRUCTURAL STEEL SHALL BE GRADE 50, Fy = 50,000 PSI.

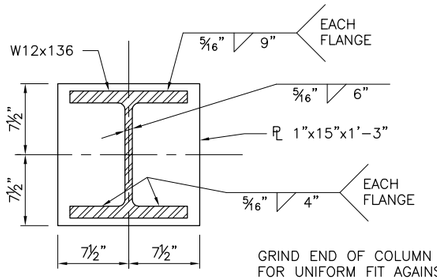
WELDING ELECTRODES SHALL BE E70XX.

COIL THREADED ROD SHALL HAVE YIELD STRESS, Fy ≥ 90 KSI AND ULTIMATE STRESS, Fu ≥ 120 KSI.

PLAIN ELASTOMERIC PAD SHALL BE GRADE 3 OR HIGHER. DESIGN SHEAR MODULUS, G = 150 PSI AT 73°F. HARDNESS = 60 DUROMETER (SHORE A). DO NOT PAINT STEEL SURFACES IN CONTACT WITH ELASTOMERIC PAD.

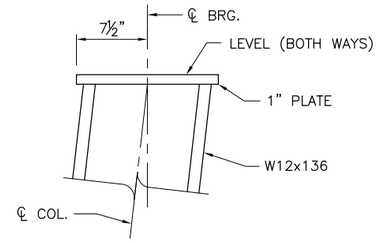


BRACING INTERSECTION



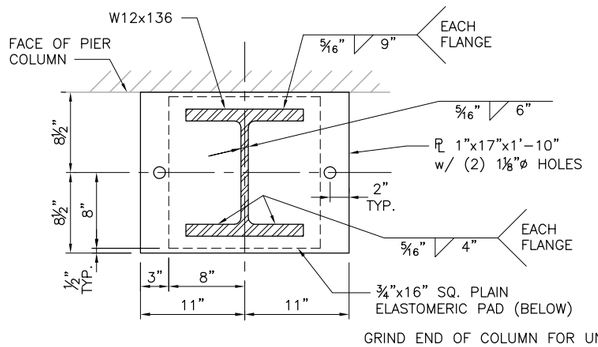
GRIND END OF COLUMN FOR UNIFORM FIT AGAINST PLATE BEFORE WELDING.

BOTTOM OF PLATE



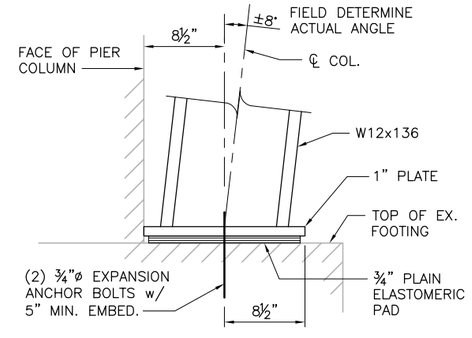
SIDE

COLUMN TOP PLATE



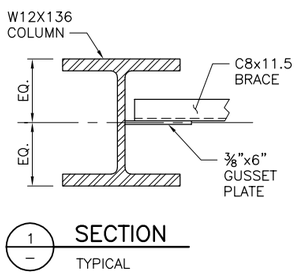
GRIND END OF COLUMN FOR UNIFORM FIT AGAINST PLATE BEFORE WELDING.

TOP OF PLATE

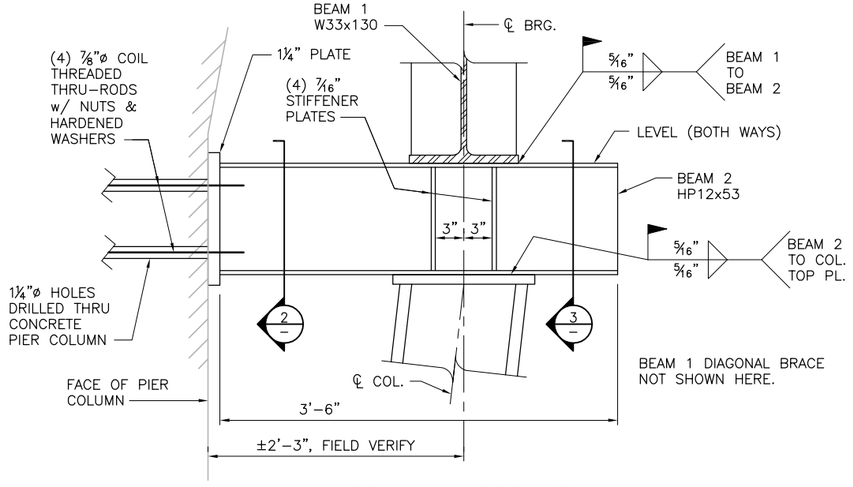


SIDE

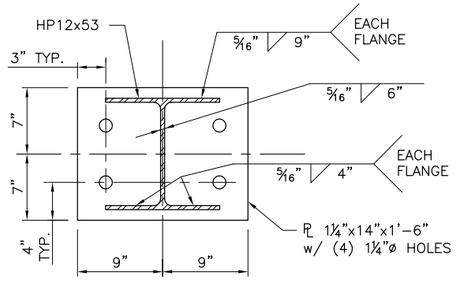
COLUMN BASE PLATE



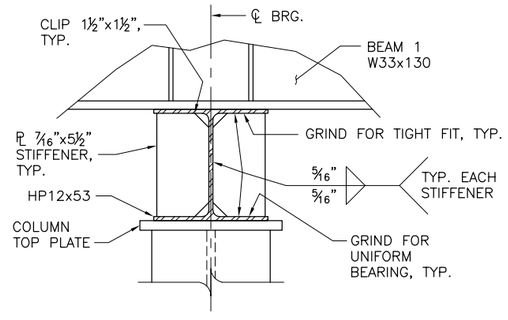
1 — SECTION
TYPICAL



BEAM 2 – SIDE VIEW



2 — SECTION



3 — SECTION

STRUCTURE NO. CSG-F.85-08.23

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STATEMENT:

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benesch engineers · scientists · planners

DESIGNED BY: M. MCDONALD DATE: 5/14/14
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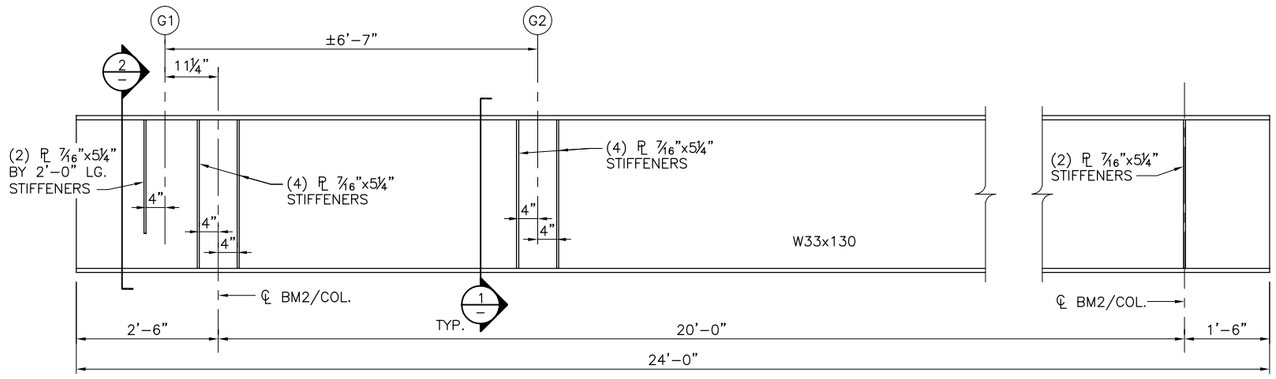
CHECKED BY: DATE:

CIMARRON STREET OVER FOUNTAIN CREEK

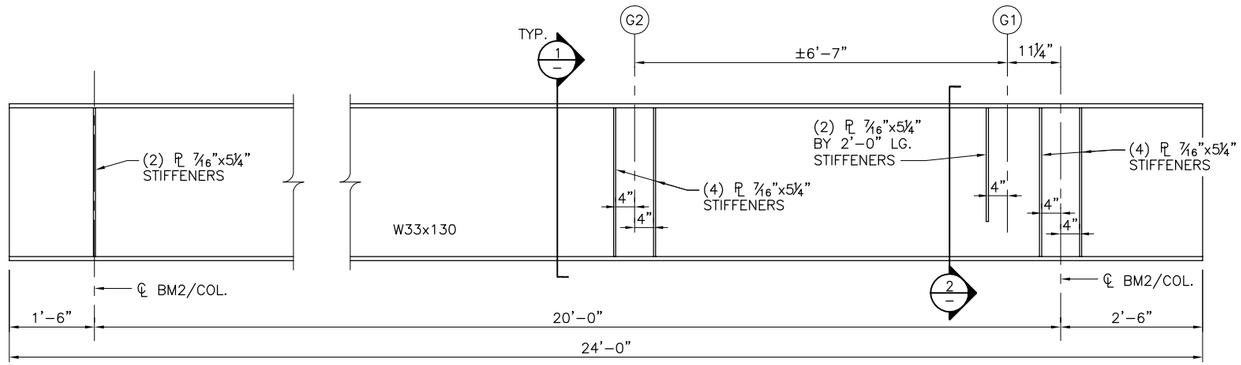
PIER 2 REPAIR DETAILS (2 OF 4)

JOB NO. 000 SHEET 2 OF 4



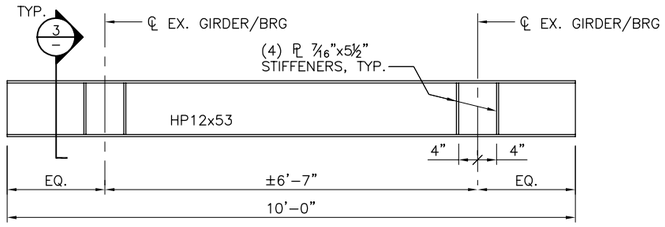
EAST BEAM 1 – ELEVATION

LOOKING WEST

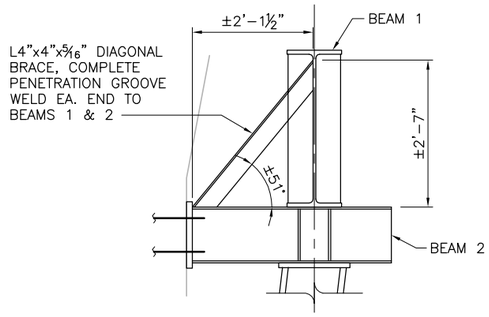


WEST BEAM 1 – ELEVATION

LOOKING EAST

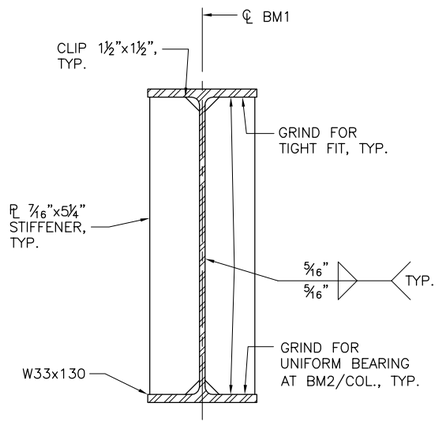


BEAM 3 – ELEVATION

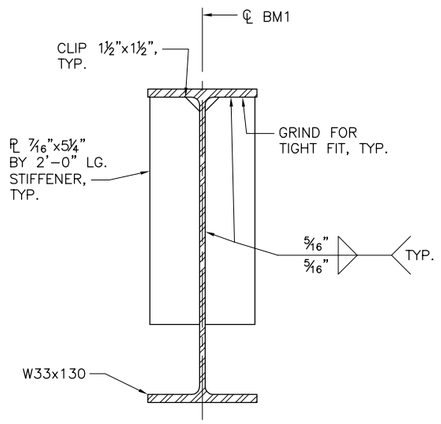


BEAM 1 DIAGONAL BRACE

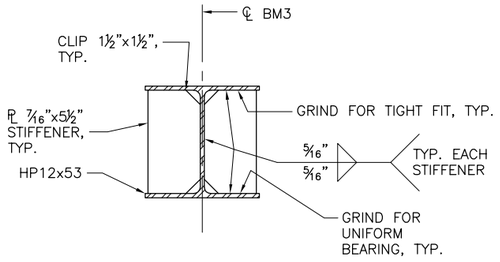
PROVIDE A DIAGONAL BRACE AT EACH END OF BEAM 1, TYPICAL.



1/– SECTION



2/– SECTION



3/– SECTION

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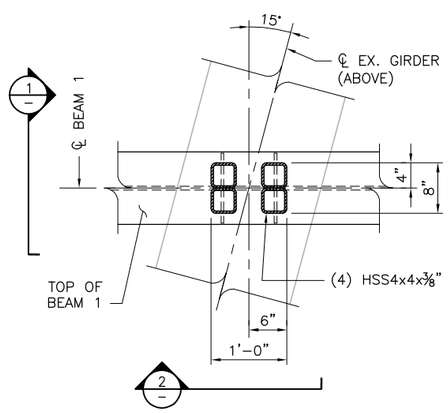
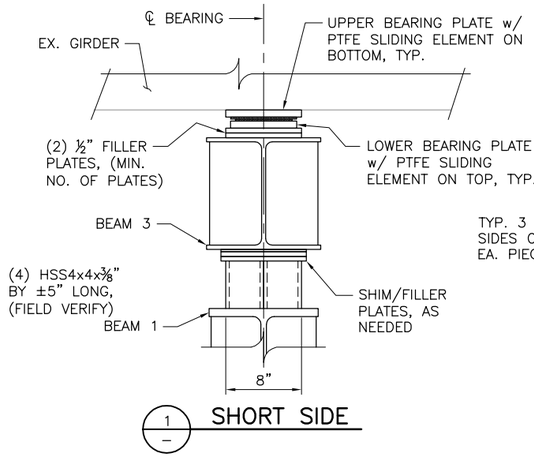
PIER 2 REPAIR DETAILS (3 OF 4)

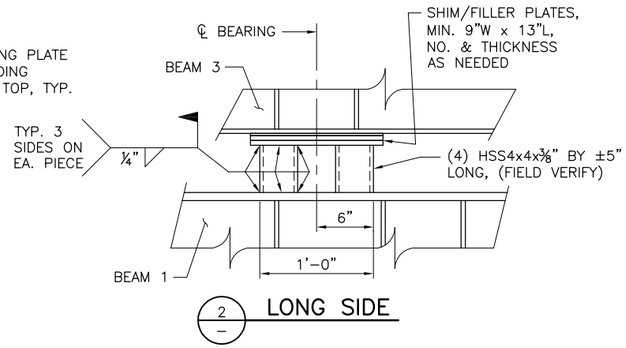
JOB NO. 000 SHEET 3 OF 4



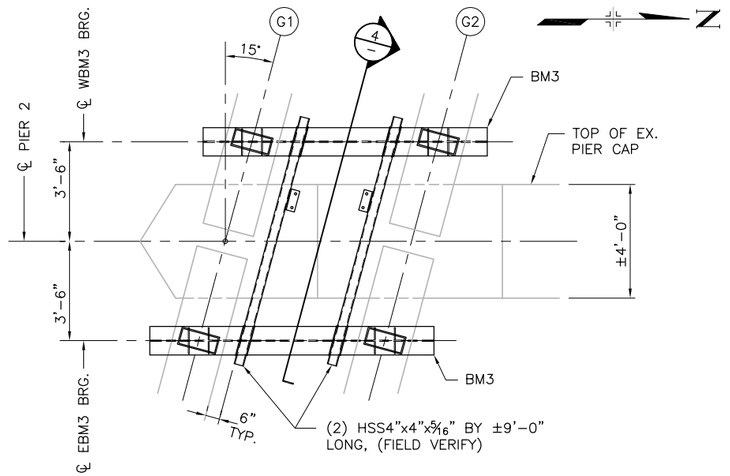
BEAM 3 SUPPORTS



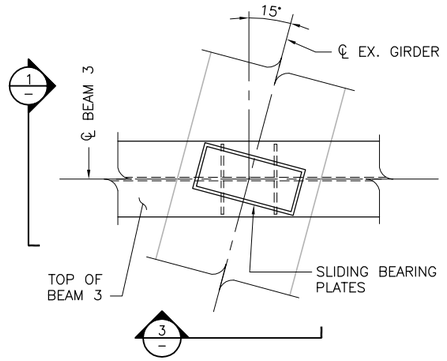
SHORT SIDE



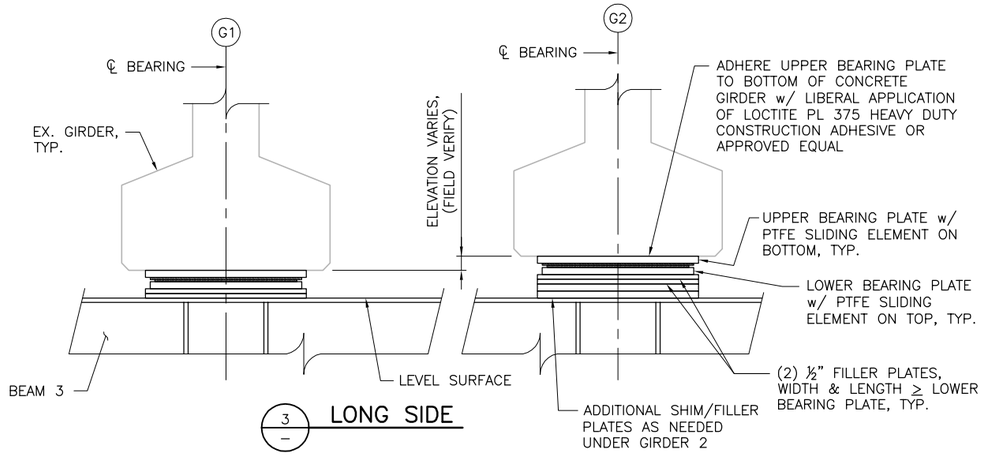
LONG SIDE



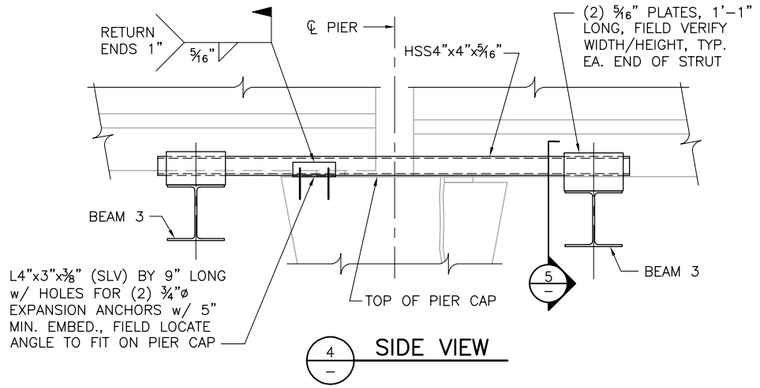
BEAM 3 TOP STRUTS



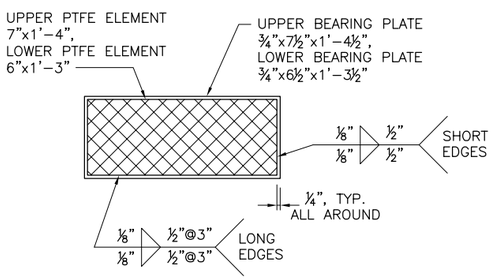
BEARING PLAN



LONG SIDE



SIDE VIEW



PTFE SLIDING ELEMENT ON BEARING PLATE

SLIDING ELEMENTS SHALL BE FLUOROGOLD PTFE COATING ON 10 GAUGE CARBON STEEL BACKING PLATE BY SLIDE BEARINGS, LP. SPECIFY ¼" RECESS OF PTFE ON BACKING PLATE, ALL EDGES.

SHIM/FILLER PLATE CONNECTIONS

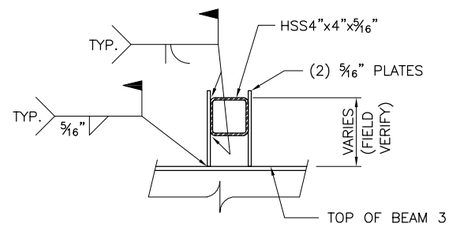
ALL SHIM/FILLER PLATES AND SIMILAR MEMBERS WILL NEED TO BE CONNECTED TO EACH OTHER AND TO SUPPORTING MEMBERS OR MEMBERS BEING SUPPORTED TO RESIST LATERAL FORCES AND MOVEMENTS. (THE TWO PTFE SLIDING BEARING SURFACES ARE THE ONLY INTERFACE THAT SHALL BE LEFT FREE TO MOVE.) UNLESS OTHERWISE NOTED, THE CONNECTIONS SHALL BE MADE BY ANY OF THE FOLLOWING:

1. STAGGER OR STEP THE PLATES AND PROVIDE 3⁄16" FILLET WELDS, 1" @ 3" STITCHED, ON BOTH LONG SIDES.
2. PROVIDE A MINIMUM OF TWO 5⁄16"x3" KEEPER BARS SYMMETRICALLY PLACED AND RUNNING VERTICALLY OVER FULL HEIGHT ON EACH LONG SIDE OF SHIM PLATES, (MINIMUM 4 KEEPER BARS TOTAL PER STACK). CONTINUOUS ¼" FILLET WELD BOTH VERTICAL EDGES OF EACH KEEPER BAR TO SHIM PLATES FULL HEIGHT.
3. OTHER SOLUTION DETERMINED AND AGREED TO BETWEEN THE CONTRACTOR AND ENGINEER.

GIRDER JACKING/LIFTING DIMENSIONS

JACK/LIFT THE EXISTING CONCRETE GIRDERS AND LOAD THE GIRDER SUPPORT SYSTEM AS FOLLOWS:

1. Lift West Girder 1, West Girder 2, and East Girder 2 approximately ¼" up off their existing bottom bearing plates on the pier cap, insert an additional ⅛" shim plate at new Beam 3, and then lower the jacks to let the stacks of shim plates compress. The end result should be 0" (back in contact) to ¼" clearance between these three girders and their bottom bearing plates on the pier cap.
2. Lift East Girder 1 to +½" up off the pier concrete, insert an additional shim plate(s), and then lower the jacks to let the stacks of shim plates compress. The end result should be approximately ½" clearance between the bottom of the concrete girder and the top of the concrete pier cap, (no more concrete to concrete contact).



SECTION

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PIER 2 REPAIR DETAILS (4 OF 4)

JOB NO. 000 SHEET 4 OF 4